

TIBICENIDAE VAN DUZEE, 1916 (INSECTA, CICADOIDEA):
PROPOSED SUPPRESSION UNDER THE PLENARY POWERS IN
FAVOUR OF PLATYPLEURIDAE SCHMIDT, 1918. Z.N.(S.) 1626

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The appearance in 1963 of Fascicle VIII of the General Catalogue of the Homoptera (Metcalf Z.P.) has drawn attention again to the great confusion which still exists in the classification and nomenclature of the Cicadas. This confusion has been caused by a change over in the type designation of the genus *Cicada* Linnaeus, 1758, whereby the family-group name Cicadinae was transferred to another subfamily Gaeaninae Distant. The new name for the original subfamily (Cicadinae Distant) was unfortunately based by Van Duzee, 1916 (*Check List of Hemiptera of America N. of Mexico*: 55) on the genus *Tibicen* Latreille in Berthold, 1827, and called Tibiceninae. Seeing that there was already a subfamily Tibicininae Distant, 1905, based on the genus *Tibicina* Kolenati, 1857, the similarity of these two group-names, differing by only one letter, has resulted in continual confusion. The mis-spelling of one or the other by various authors has misled the cataloguers who, not being specialists, have placed the taxa concerned in the wrong subfamily or family in their catalogue. Mr. Alfred Orian has recently (1964) published a paper (*Ann. Mag. nat. Hist.* (13) 6 : 321-328, describing a new genus of cicada from Rodriguez, in which he draws attention to this confusion and gives examples.

Some of the most important genera concerned, as type genera of the family-groups, have had a chequered history of identification and mis-identification. Mr. Orian has dealt with some of these but it is felt that a complete statement of the case is badly needed in the interest of future workers who may not have the original works immediately available.

2. Linnaeus, 1758 (*Syst. Nat.* (ed. 10) 1 : 436) originally included 42 species in his genus *Cicada* but only 11 of them were in his group Manniferae which comprised the true Cicadas.

In 1801, Lamarck (*Syst. Anim. sans Vertèbres*: 292) cited *C. orni* Linnaeus as a single example of the genus *Cicada* Linnaeus. According to Opinion 79 Lamarck's examples are not acceptable as type-species designations and are invalid. In [1802-1803] Latreille (*Hist. nat. Crust. Ins.* 3 : 257) also cited *C. orni* L. as an example of *Cicada* Linnaeus and this too is unacceptable as a type-designation. In 1807 Latreille (*Gen. Crust.* 3 : 152) cited *C. haematodes* Scopoli, 1763, as an example but this work has been ruled out by the Commission for type-species designations. In any case, *C. haematodes* Scopoli was not one of the originally included species.

In 1810, Latreille (*Consid. général*: 434) designated *Tettigonia plebeia* Scopoli as type-species but this again is not an originally included species.

3. In 1857, Kolenati (*Melet. Ent.* 7 : 6) validly established the genus *Tettigia* for *Cicada orni* L. type-species by monotypy. Although this name had been previously described by Amyot in his *Méthod. Mononymique* 1847 : 348,

Amyot's work has been rejected in Opinion 686. *Tettigia* must therefore be attributed to Kolenati. In the same work Kolenati validly established the genus *Tibicina* Amyot for the single species *Cicada haematodes* Scopoli which is therefore type-species by monotypy. *Tibicina* also must be attributed to Kolenati.

4. Distant 1905 (*Ann. Mag. nat. Hist.* (7) 15 : 304) followed Latreille, 1810, in designating *C. plebeia* Scopoli, 1763, as type-species of *Cicada* L. 1758, but as pointed out above, this species was not one of the originally included species and the designation is invalid.

In 1906, Distant published his *Synonymic Catalogue of Homoptera*, Part 1, *Cicadidae* (British Museum, London), which was the first work to deal with the classification of the Cicadidae in a comprehensive, world-wide manner. Distant split up the old family Cicadidae into three subfamilies Cicadinae, Gaeaninae and Tibicininae, based on the structure of the tympanal coverings. Each subfamily was further subdivided into a number of Divisions equivalent to tribes.

5. In 1907, Jacobi (*Zool. Anz.* 32 : 7) raised Distant's division Tettigadesaria of the Tibicininae to subfamily rank, the Tettigadinae becoming the fourth subfamily of Cicadidae.

6. The type-species of *Cicada* Linnaeus, 1758, was validly designated for the first time by Van Duzee in 1916 (*Check List of Hemiptera of America N. of Mexico* : 56). Van Duzee did so because he thought that Lamarck in 1801 had validly designated the type-species by nominating *Cicada orni* L., but as shown in paragraph (2) above Lamarck's designation is not acceptable (Opinion 79). However, Van Duzee's own citation was valid.

The consequent switch of type-species of *Cicada* Linnaeus from *C. plebeia* Scopoli to *C. orni* Linnaeus automatically transferred *Cicada* Linnaeus from Distant's subfamily Cicadinae to his subfamily Gaeaninae leaving the subfamily-group Cicadinae Distant nec Van Duzee without a name. For this group, as pointed out in (1) above, Van Duzee, 1916, unfortunately established the name Tibiceninae.

7. In 1919, Schmidt (*Stettin ent. Zeitg.* 80 : 366) established three new tribes in Distant's subfamily Cicadinae (=Tibiceninae V. Duz.), Polyneurini, Platyleurini and Talaingini the latter having been removed from Distant's Gaeaninae. Since he had already used the tribal name Platyleurini in the previous year (*Stettin ent. Zeitg.* 79 : 378) it will date from 1918.

8. In 1925, Handlirsch (*in* Schroeder *Handb. Ent.* 3 : 1116–1117) criticised Distant's classification and replaced it as follows:

He divided the family Cicadidae into three subfamilies

(1) Cicadinae (which he attributed to Buckton¹) comprising Distant's

¹ Both Latreille & Buckton used their terms Cicadariae and Cicadae respectively to cover the whole of the Auchenorrhynchos Homoptera. Leach used the group name Tettigonides for the Cicadas proper but this is invalid being based on a homonym of *Tettigonia* L. 1758 in the Orthoptera. The first author to establish a valid family-group name Cicadidae for the Cicadas was Westwood, 1840 (*Introd. mod. Classif. Insects* 2 : 420).

Tibicininae and Gaeaninae. This group he split into 5 tribes, Hemidictyini, Chlorocystini, Tettigarctini, Tibicinini and Cicadini.

(2) Platyleurinae (=Cicadinae Distant)

(3) Tettigadinae Jacobi

His use of Cicadinae for Distant's two subfamilies Gaeaninae and Tibicininae together was an innovation, since Van Duzee had retained Tibicininae as a distinct subfamily. In replacing Tibiceninae Van Duzee by Platyleurinae Handlirsch was following Schmidt, 1918 and obviated the confusion which arises by the use of both Tibiceninae Van Duzee and Tibicininae Distant for two different subfamily groups within the Cicadidae.

9. In 1926, Horvath (*Ann. Mus. Nat. Hung.* 16 : 321-40) attempted to clear up the confusion concerning the generic names of the three large European Cicadas. He correctly followed Van Duzee, 1916 in accepting *Cicada orni* Linnaeus as type-species of *Cicada* L. but he wrongly designated *Cicada haematodes* Scopoli, 1763, as the type-species of *Tibicen* Latreille, 1827. *Tibicen* Latreille was actually monotypic with the single included species *Cicada plebeia* Scopoli 1763. This latter species Horvath, 1926, designated as the type-species of his new nominal genus *Lyristes* which consequently falls as an objective junior synonym of *Tibicen* Latreille. As shown in 3 above, Kolenati was the first to give a valid name, *Tibicina*, to the generic concept typified by *Cicada haematodes* Scopoli.

10. Myers, 1929 (*Insect Singers*, London pp. 80-85) discussed the classification of the Cicadas and adopted still another arrangement. He raised Handlirsch's tribe Tettigarctini to subfamily rank and attributed it to Tillyard, but since all categories are coordinate, the subfamily Tettigarctinae must be attributed to Distant (Tettigarctaria 1906). He also retained Tettigadinae Jacobi. Myers used the name Tibicininae Distant for Handlirsch's Cicadinae but split off Handlirsch's tribe Cicadini (=Gaeaninae Dist.) which he placed with the Moganniini Distant in the subfamily Cicadinae V. Duzee. (=Gaeaninae Dist.). He followed Handlirsch, 1925, in using the name Platyleurinae for Van Duzee's Tibiceninae. Myers therefore accepted 5 subfamilies instead of the 3 of Handlirsch : Tettigarctinae, Tettigadinae, Tibicininae, Cicadinae & Platyleurinae.

11. Up to 1927, Kato, a prolific writer on Japanese Cicadidae, used Distant's three subfamilies, Cicadinae, Gaeaninae and Tibicininae having overlooked Van Duzee's 1916 change in family-group names. But in 1930 (*Bull. Biogeogr. Soc. Japan* 2 : 38-39) he replaced Cicadinae Distant, 1906, by Platyleurinae Schmidt, 1918 (Handlirsch 1925) and Gaeaninae Distant, 1906, by Cicadinae Van Duzee 1916. In 1932, Kato (*Monograph of Cicadidae*) published a new classification of the Cicadas comprising some radical changes not generally approved and on p. 144 established the family-group name Platypediinae. Kato's works are mainly in Japanese and therefore difficult to study critically.

12. In 1939, Metcalf (*J. Soc. Biol. nat. Hist.* **1** : 247) inadvertently published a preview of his new classification of the Cicadidae in an appendix to a technical paper entitled Hints on Bibliographies. The classification was part of an Outline of a Topical Index. Metcalf raised the family Cicadidae Westwood to superfamily rank, Cicadoidea with only two families (1) Cicadidae and (2) Tibicinidae. His Cicadidae was divided into two subfamilies (a) Tibiceninae V. Duzee, 1916 (=Cicadinae Dist. 1889 =Platypleurinae Schmidt, 1919, Handlirsch 1925, Kato 1930) and (b) Cicadinae V. Duzee 1916 (=Gaeanae Dist. 1906). His Tibicinidae included four subfamilies.

(a) Tibicininae Distant, 1906.

(b) Tettigadinae (Distant 1906) (Tettigadesaria Dist, 1906 = Tettigadinae Jacobi, 1907, and Handlirsch 1925).

(c) Platypediinae. Kato 1932.

(d) Tettigarctinae Dist. 1906 (=Tettigarctaria Dist. 1906).

13. In 1954, Kato (*Kontyû* **21** : 97-99) published a short paper (presumably because his 1932 monograph had been overlooked by western workers) in which he repeated his 1932 classification. Kato raised Metcalf's Tettigadinae to Tettigadidae claiming it as a new family. This group must be attributed to Distant, 1906, who first established a supra-generic name (Tettigadesaria) for it. Kato raised the Platypediinae of Metcalf to family rank and correctly claimed it as his family (fam. nov.). He also raised Tettigarctinae Metcalf to family rank but this too must be attributed to Distant, 1906. The principal change was the lumping of the subfamilies Platypleurinae Handlirsch (=Cicadinae Distant) and Cicadinae Van Duzee (=Gaeanae Distant) to form a new subfamily Cicadinae of the family Cicadidae. Kato retained the subfamily Tibicininae Distant in his family Cicadidae.

14. In 1956, Kato published a book entitled *The Biology of the Cicadas* (Bull. of the Cicadidae Museum) Tokyo, in which he maintained his 1932 classification and gave keys in Japanese to the tribes. He also gave a phylogenetic dendrogram to the group.

Although Kato avoided the confusion between the subfamily names Tibiceninae and Tibicininae by reducing the Tibiceninae to tribal status under his Cicadinae, the confusion still remained at tribal level. He retained both Tibicenini and Platypleurini as tribes of his Cicadinae. As pointed out in paragraph 13 above, under the Code, Article 36, all categories of the family-group are coordinate. The only family-group name to be attributed to Kato (1932) is, therefore, Platypediidae.

15. In 1962, the appearance of *A bibliography of the Cicadoidea* by Z. P. Metcalf was the prelude to the publication in 1963 of his *General Catalogue of the Homoptera*, Fascicle VIII in three volumes. Cicadoidea Part 1 Cicadidae, Section I, Tibiceninae (volume 1) and Section II Gaeanae and Cicadinae (volume 2): The third volume consisted of Part 2 Tibicinidae.

The only change by Metcalf in 1963 was the separation of Gaeanae from Cicadinae.

The changes in the classification are shown in the following table:

Metcalf 1939	Kato 1954	Metcalf 1963
Cicadoidea	Cicadoidea	Cicadoidea
Fam. 1. Cicadidae	Fam. 1. Cicadidae	Fam. 1. Cicadidae
Subf. 1. Tibiceninae		Subf. 1. Tibiceninae
	Subf. 1. Cicadinae	Subf. 2. Gaeaninae
Subf. 2. Cicadinae		Subf. 3. Cicadinae
Fam. 2. Tibicininae	Subf. 2. Tibicininae	Fam. 2. Tibicininae
Subf. 3. Tibicininae		Subf. 4. Tibicininae
Subf. 4. Tettigadinae	Fam. 2. Tettigadidae	Subf. 5. Tettigadinae
Subf. 5. Platypediinae	Fam. 3. Platypediidae	Subf. 6. Platypediinae
Subf. 6. Tettigarctinae	Fam. 4. Tettigarctidae	Subf. 7. Tettigarctinae

16. In preparing Fascicle VIII of the Catalogue of Homoptera after Metcalf's death at the beginning of 1956 considerable confusion arose in correlating Kato's 1956 classification with that of Metcalf in which Kato's subfamily Cicadinae (=Platyleurinae Schmidt 1919 and Handlirsch 1925 + Cicadinae Van Duzee 1916 (=Gaeaninae Distant)) had been split into three subfamilies, Tibiceninae, Gaeaninae and Cicadinae. Kato (1956) had arranged the tribes of his Cicadinae irrespective of their previous assignment to any one of the old family-groups of Distant, Van Duzee and Handlirsch. In Metcalf's catalogue when the tribes came to be distributed amongst the three subfamilies Tibiceninae, Gaeanini and Cicadinae Kato's erroneous arrangement was used and confusion resulted. Platylomiini and Lahugadini were placed in the Gaeaninae although they actually belong to the Tibiceninae. Pomponiaria attributed to Kato, 1932, based on *Pomponia* Stål also belongs to the Tibiceninae and is completely different from the Tribe Psithyristrini Distant under which it is placed as a subtribe. *Terpnosia* is also wrongly placed in the Tibiceninae and actually belongs to the Gaeaninae.

However, it is not the place here to discuss the relative merits of Kato's and Metcalf's taxonomic classification of the Cicadoidea. We are only concerned with the confusion among specialists and students which has been brought about by the mis-spelling of the similar names Tibiceninae and Tibicininae whether of family, subfamily or tribal status. The result of this confusion is well shown in Metcalf's Fascicle VIII Part 1 : 11 of the General Catalogue of Homoptera (1963). The Tibiceninae* (p. 11) of Distant, 1889, is actually a mis-spelling for Tibicininae and is based on *Tibicina* Kolenati, type-species *Cicada haematodes* Scopoli. Tibiceninae Karsch, 1893, is a mis-spelling of Tibicininae and comprises two genera *Trismarcha* Karsch and *Nablites* Karsch both of which are placed by Metcalf correctly later in the Catalogue in the Tibicininae. Tibiceninae Kirkaldy, 1903, is another mis-spelling of Tibicininae and includes only *Lacetas* Karsch which Metcalf also correctly placed later in

* Tibiceninae is wrongly attributed to Atkinson, 1886, but Atkinson wrote "Tibicen" which is not a group-name and includes *Tibicen* and *Melampsalta* only.

the Catalogue in the Tibicininae. Tibiceninae Goding & Froggatt, 1904, is also a mis-spelling of Tibicininae, for these authors state on p. 544 for this subfamily that the "sound organs are entirely uncovered".

Tibiceninae Jacobi, 1907, is used in a footnote on page 14 of Jacobi's paper only to point out that Tibiceninae Distant, 1889, is linguistically inadmissible for Tibicininae. On page 12, Metcalf cites Tibiceninae Kato but this is a reference to Distant's Tibiceninae, 1889, which as shown above was a mis-spelling to Tibicininae.

17. These examples are enough to show that the existence of two such similar names as Tibicininae and Tibiceninae is a continual future source of confusion in the nomenclature of the Cicadas.

The International Commission is therefore requested:

- (1) to use its plenary powers to suppress the family-group name Tibiceninae Van Duzee, 1916, in favour of Platyleurinae Schmidt, 1918, type-genus *Platyleura* Amyot and Serville, 1843;
- (2) to place on the Official List of Family-Group Names in Zoology the names:
 - (a) Cicadidae Westwood, 1840, *Introd. mod. Classif. Ins.* 2 : 420 (Van Duzee, 1915) (type-genus *Cicada* Linnaeus 1758);
 - (b) Platyleuridae Schmidt, 1918 (established as Platyleurini) (type-genus *Platyleura* Amyot & Serville, 1843);
 - (c) Tibicinidae Distant, 1905 (established as Tibicininae) (type-genus *Tibicina* Kolenati, 1857);
 - (d) Tettigadidae (correction of Tettigadesaria) Distant, 1906, *Syn. Cat. Homopt.* 1, Cicadidae : 109 (type-genus *Tettigades* Amyot & Serville, 1843);
 - (e) Platypediidae Kato, 1932, *Mon. Cicadidae* : 144 (type-genus *Platypedia* Uhler, 1888);
 - (f) Tettigarctidae Distant, 1906 (correction of Tettigarctaria) (type-genus *Tettigarcta* White, 1845);
- (3) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the names:
 - (a) Tibiceninae Van Duzee, 1916 (suppressed under the plenary powers in (1) above (type-genus *Tibicen* Latreille in Berthold, 1827);
 - (b) Cicadinae Distant, 1889, *Mon. Orient. Cicad.* : 3 (type-genus *Cicada* Distant, 1906, nec, Linnaeus, 1758).
- (4) to place the following names on the Official List of Generic Names in Zoology:
 - (a) *Cicada* Linnaeus, 1758 (gender : feminine) (type-species *Cicada orni* Linnaeus designated by Van Duzee, 1916);
 - (b) *Tibicen* Latreille in Berthold, 1827, in Latreille, *Nat. Fam. Thierr.* : 426 (gender : masculine) (type-species by monotypy, *Cicada plebeia* Scopoli, 1763);
 - (c) *Platyleura* Amyot & Serville, 1843, *Hist. nat. Ins., Hémipt.* : 465 (gender : feminine) (type-species, *Cicada stridula* Linnaeus, 1758, designated by Distant, 1906);

- (d) *Tibicina* Kolenati, 1857 (gender : feminine) (type-species by monotypy, *Cicada haematodes* Scopoli, 1763);
- (e) *Tettigades* Amyot & Serville, 1843 (gender : masculine) (type-species by monotypy, *Tettigades chilensis* Amyot & Serville);
- (f) *Platypedia* Uhler, 1888, *Ent. Amer.* **4** : 23 (gender : feminine) (type-species designated by Distant, 1906, *Cicada areolata* Uhler, 1861);
- (g) *Tettigarcta* White, 1845, in Eyre, *J. Exped. Disc. cent. Australia*, **1**, App. : 433, Tab. 4, figs. 4 & 5 (gender : feminine) (type-species by monotypy, *Tettigarcta tomentosa* White, 1845);
- (5) to place the following names on the Official Index of Rejected and Invalid Generic Names in Zoology:¹
 - (a) *Tettigia* Kolenati, 1857 (type-species by monotypy *Cicada orni* Linnaeus, 1758) (an objective synonym of *Cicada* Linnaeus, 1758);
 - (b) *Cicada* Distant, 1906, nec Linnaeus 1758 (objective synonym of *Tibicen* Latreille in Berthold, 1827);
 - (c) *Lyristes* Horvath, 1926 (type-species *Cicada plebeia* Scopoli, 1763, by original designation) (objective synonym of *Tibicen* Latreille in Berthold, 1827);
- (6) to place the following names on the Official List of Specific Names in Zoology:
 - (a) *orni* Linnaeus, 1758, as published in the binomen *Cicada orni* (type-species of *Cicada* Linnaeus, 1758);
 - (b) *plebeia* Scopoli, 1763, *Ent. Carn.* : 117, 345, as published in the binomen *Cicada plebeia* (type-species of *Tibicen* Latreille in Berthold, 1827);
 - (c) *stridula* Linnaeus, 1758, as published in the binomen *Cicada stridula* (type-species, designated by Distant, 1906, of *Platyleura* Amyot & Serville, 1843);
 - (d) *haematodes* Scopoli, 1763, as published in the binomen *Cicada haematodes* (type-species by monotypy of *Tibicina* Kolenati 1857);
 - (e) *chilensis* Amyot & Serville, 1843, as published in the binomen *Tettigades chilensis* (type-species by monotypy of *Tettigades* Amyot & Serville, 1843);
 - (f) *areolata* Uhler, 1862, *Proc. Acad. nat. Sci. Philad.* **13** : 285, as published in the binomen *Cicada areolata* (type-species of *Platypedia* Uhler, 1888);
 - (g) *tomentosa* White, 1845, as published in the binomen *Tettigarcta tomentosa* (type-species of *Tettigarcta* White 1845).

¹ *Tettigonia* Fabricius, 1775 (*Syst. Ent.*: 679) as a junior homonym of *Tettigonia* Linnaeus, 1758 (Orthoptera), has already been placed on the Official Index (Name No. 138) by Opinion 299. Its type-species is *Cicada tibicen* Fabricius, 1775 nec Linnaeus, 1758, designated by Kirkaldy 1900. This species has been renamed *Tibicen linnei* by Smith and Grossbeck, 1907. The true *Cicada tibicen* Linnaeus, 1758, is a South American species of the genus *Diceroprocta* Stål (= *Cicada* Distant, 1906 nec Linnaeus, 1758).